



**THE CATHOLIC UNIVERSITY OF EASTERN AFRICA**

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**SEPTEMBER –DECEMBER 2021**

**FACULTY OF SCIENCE**

**DEPARTMENT OF COMMUNITY HEALTH AND DEVELOPMENT**

**REGULAR PROGRAMME**

**UNUR 208: PARASITOLOGY**

**Date: DECEMBER 2021**

**Duration: 3 Hours**

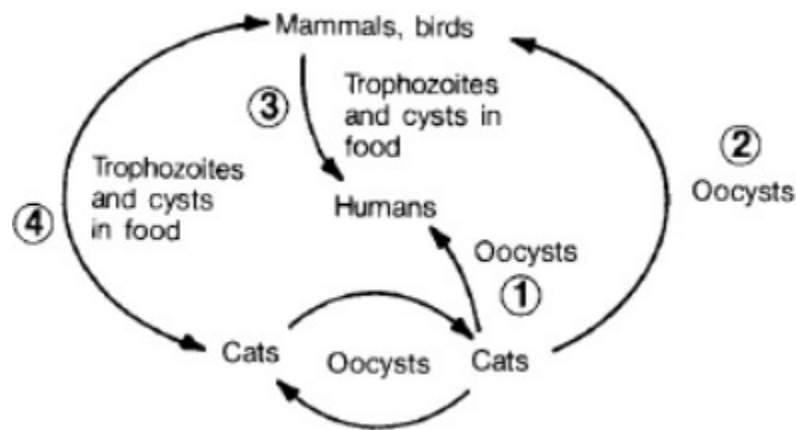
**INSTRUCTIONS: ANSWER ALL QUESTIONS IN THE BOOKLET PROVIDED**

**SECTION A: MULTIPLE CHOICE QUESTIONS**

**(20 MARKS)**

1. A host that harbors the larval or asexual stage of a parasite:
  - A. Definitive host
  - B. Intermediate host
  - C. Reservoir host
  - D. Asymptomatic host
2. Larvae of *Ascaris lumbricoides*:
  - A. hatch out of the egg in the soil
  - B. hatch out of the egg in the small intestine
  - C. hatch out of the egg in the alveoli of the lung
  - D. molt to L3 larvae in the small intestine
3. One of the following is not a cestode:
  - A. *Diphyllobothrium*
  - B. *Hymenolepis*
  - C. *Schistosoma*
  - D. *Taenia*

4. In order to exert control over the primary cause of toxoplasmosis of pregnancy, which one of the following steps of the life cycle of *Toxoplasma* would be most practical to interrupt?



- A. Step 1  
B. Step 2  
C. Step 3  
D. Step 4
5. The diagnostic characteristics of *Plasmodium falciparum* are best described by which one of the following statements?
- A period of 72 h is required for the development of the mature schizont, which resembles a rosette with only 8 to 10 oval merozoites
  - An important diagnostic feature is the irregular appearance of the edges of the infected red blood cell
  - The signet-ring-shaped trophozoite is irregular in shape with ameboid extensions of the cytoplasm
  - Except in infections with very high parasitemia, only ring forms of early trophozoites and the gametocytes are seen in the peripheral blood
6. A woman complains of having paroxysmal attacks of chills, fever, and sweating; these attacks last a day or two at a time and recur every 36 to 48 h. Examination of a stained blood specimen reveals ring-like and crescent-like forms within red blood cells. The infecting organism most likely is:
- Plasmodium falciparum*
  - Plasmodium vivax*
  - Plasmodium malariae*
  - Plasmodium vivax*

7. Human infection with the beef tapeworm, *Taenia saginata*, usually is less serious than infection with the pork tapeworm, *Taenia solium*, because:
- A. Acute intestinal stoppage is less common in beef tapeworm infection
  - B. Larval invasion does not occur in beef tapeworm infection
  - C. Toxic by-products are not given off by the adult beef tapeworm
  - D. The adult beef tapeworms are smaller
8. Analysis of a patient's stool reveals small structures resembling rice grains; microscopic examination shows these to be proglottids. The most likely organism in this patient's stool is:
- A. *Ascaris lumbricoides*
  - B. *Necator americanus*
  - C. *Taenia saginata*
  - D. *Trichuris trichiura*
9. Ameba that are parasitic in humans are found in the oral cavity and the intestinal tract. Which one of the following statements best describes these intestinal amebae? They:
- A. are usually nonpathogenic
  - B. can cause peritonitis and liver abscesses
  - C. are usually transmitted as trophozoites
  - D. occur most abundantly in the duodenum
10. Schistosomiasis is a disease characterized by granulomatous reactions to the ova or to products of the parasite at the place of oviposition. Clinical manifestations include which one of the following?
- A. Bladder wall hyperplasia
  - B. Pulmonary embolism
  - C. Splenomegaly
  - D. Cardiac abnormalities
11. Which of the following organisms penetrates skin, is endemic in Africa and Latin America, and has a large lateral spine on its eggs?
- A. *Clonorchis sinensis*
  - B. *Schistosoma mansoni*
  - C. *Schistosoma japonicum*
  - D. *Schistosoma haematobium*
12. Liver abscess is a known complication of infection with:
- A. *Fasciola hepatica*
  - B. *Giardia lamblia*
  - C. *Schistosoma mansoni*
  - D. *Entamoeba histolytica*

13. *Trypanosoma epimastigote* is:
- A. Found in definitive host
  - B. Free living
  - C. Found in intermediate host
  - D. Host cells
14. Scotch tape method is performed in the diagnosis of:
- A. Trichuriasis
  - B. Enterobiasis
  - C. Ascariasis
  - D. Taeniasis
15. All of the following nematodal infections occur by ingestion of infective eggs except?
- A. *Ascaris lumbricoides*
  - B. *Strongyloides stercoralis*
  - C. *Enterobius vermicularis*
  - D. *Trichuris trichiura*
16. It is a must that examination of stool and sputum be performed for the presence of eggs in:
- A. *Opisthorchis*
  - B. *Clonorchis*
  - C. *Fasciola*
  - D. *Paragonimus*
17. Which of the following is not soil transmitted?
- A. *Strongyloides stercoralis*
  - B. *Ancylostoma duodenale*
  - C. *Ascaris lumbricoides*
  - D. *Trichinella spiralis*
18. *Enterobius vermicularis*:
- A. Is also called hookworm
  - B. Its habitat is in the large intestine
  - C. Has lung migration
  - D. Infective stage is the filariform larvae
19. *Necator americanus*:
- A. Is also called pinworms
  - B. Infective stage is swallowing embryonated eggs
  - C. Has lung migration
  - D. Habitat is the large intestine

20. Morphological characteristics of the rhabditiform (non-infective) larvae of *Strongyloides stercoralis* are a:
- short buccal capsule and large genital primordium
  - long buccal capsule and pointed tail
  - short buccal capsule and small genital primordium
  - small genital primordium and notch in tail

## SECTION B: SHORT ANSWER QUESTIONS

(40 MARKS)

- Describe the lifecycle of *Entamoeba histolytica* (5 marks)
- Match the insect vector indicated in column A with the parasites they transmit in humans as stated in the questions (5 marks)

PARASITE	VECTOR
<i>Trypanosoma cruzi</i>	Aedes mosquito
<i>Trypanosoma brucei</i>	Tsetse fly
<i>Leishmania donovani</i>	Black fly
<i>Wuchereria bancrofti</i>	Reduviid bug
<i>Plasmodium</i>	Anopheles mosquito
	Lice
	Rat flea

- State five (5) clinical signs and symptoms of trichuriasis (5 marks)
- State five (5) methods of prevention and control of lymphatic filariasis (5 marks)
- Describe the scotch tape diagnostic method for *Enterobius vermicularis* (5 marks)
- Describe the medical management of amoebiasis (5 marks)
- Describe the life cycle of *Taenia solium* (5 marks)
- For the below questions (a-e) the stage in the life cycle of a given nematode (roundworm) responsible for causing human disease is stated. Indicate the matching nematode: (5 marks)
  - Larvae encyst in muscle causing myalgia \_\_\_\_\_
  - Worms in colon may cause rectal prolapse \_\_\_\_\_
  - Larvae migrate to lung, causing pneumonia \_\_\_\_\_
  - Female worm migrates out anus and lays eggs on perianal skin, causing itching \_\_\_\_\_
  - Worms disseminate to various tissues in immunocompromised (autoinfection) \_\_\_\_\_

**SECTION C: ESSAY****(40 MARKS)**

1. Malaria is the leading cause of morbidity and mortality worldwide. Describe:
  - a) The life cycle of malarial infection **(6 marks)**
  - b) Signs and symptoms associated with malaria infection **(4 marks)**
  - c) Management (i.e. diagnosis, treatment, prevention and control) of malaria **(10 marks)**
2. Outline the life cycle of:
  - a) *Ancylostoma duodenale* **(10 marks)**
  - b) *Taenia solium* **(10 marks)**

**\*END\***